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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/534,633	05/11/2005	Avto Tavkheldze	12091	8643

7590 12/01/2006

Borealis Technical  
23545 NW Skyline Blvd  
North Plains, OR 97133-9205

EXAMINER
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LIU, BENJAMIN T

ART UNIT	PAPER NUMBER
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2826

DATE MAILED: 12/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

21

**Advisory Action**  
**Before the Filing of an Appeal Brief**

Application No.

10/534,633

Applicant(s)

TAVKHELIDZE ET AL.

Examiner

Benjamin T. Liu

Art Unit

2826

**--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

THE REPLY FILED 10 November 2006 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:

- a) ☐ The period for reply expires \_\_\_\_\_ months from the mailing date of the final rejection.  
b) ☒ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**NOTICE OF APPEAL**

2. ☐ The Notice of Appeal was filed on \_\_\_\_\_. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

**AMENDMENTS**

3. ☒ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because  
(a) ☒ They raise new issues that would require further consideration and/or search (see NOTE below);  
(b) ☐ They raise the issue of new matter (see NOTE below);  
(c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or  
(d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: See Continuation Sheet. (See 37 CFR 1.116 and 41.33(a)).

4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).  
5. ☐ Applicant's reply has overcome the following rejection(s): \_\_\_\_\_.  
6. ☐ Newly proposed or amended claim(s) \_\_\_\_\_ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).  
7. ☐ For purposes of appeal, the proposed amendment(s): a) ☐ will not be entered, or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.  
The status of the claim(s) is (or will be) as follows:  
Claim(s) allowed: \_\_\_\_\_.  
Claim(s) objected to: \_\_\_\_\_.  
Claim(s) rejected: \_\_\_\_\_.  
Claim(s) withdrawn from consideration: \_\_\_\_\_.

**AFFIDAVIT OR OTHER EVIDENCE**

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).  
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing of good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).  
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

**REQUEST FOR RECONSIDERATION/OTHER**

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because:  
See Continuation Sheet.  
12. ☐ Note the attached Information Disclosure Statement(s). (PTO/SB/08) Paper No(s). \_\_\_\_\_.  
13. ☒ Other: PTO 892.

Continuation of 3. NOTE: Claim 1 and 8 raise new issues such as the insulator is separated from the emitter electrode by a distance of  $d_1$ , wherein  $d_1$  is greater than zero.

Continuation of 11. does NOT place the application in condition for allowance because:

Regarding claim 15, It is argued, at page 5 of the remarks, that "First it is clear from FIG. 2 of Sung that 30 has a large positive sign adjacent to it, and 25 has a large negative sign adjacent to it, which would tend to suggest to the person of ordinary skill in the art that 30 is in fact an anode and 25 a cathode." Applicant cites no authority for his assumption that a person of ordinary skill in the art normally associates a large negative sign with a cathode.

The authorities Examiner has consulted state that a person of ordinary skill in the art normally will identify a cathode as either a positive terminal or a negative terminal, depending on the type of device the cathode is attached to.

According to the Encyclopædia Britannica Concise Encyclopedia, cathodes are identified as the negative terminals of only "passive loads" (such as resistors. It should be noted that resistors and other passive loads are heating devices, not cooling devices). See "cathode" (2003). In Britannica Concise Encyclopedia. Retrieved November 27, 2006, from <http://www.xreferplus.com/entry/5839079>. However, the device disclosed in Figure 2 of Sung, and claimed in claims 15-17, 20, and 21, is not a passive load, it is a thermionic cooling device, which operates as a source of direct current. In a source of direct current, according to Encyclopædia Britannica, the cathode is identified as the positive terminal, which would be terminal 30 in Sung.

Applicant argues on page 5 of the argument submitted 11/10/06 that "it is common practice in this field to consider the terms emitter and cathode to be synonymous, and likewise for the terms collector and anode to be synonymous." However, applicant describes on page 5 of the argument that "this is not an ipsissimis verbis test, i.e., identity of terminology is not required. In re Bond, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990)." Because the identity of terminology is not required it is irrelevant that the emitter and cathode are synonymous. It is irrelevant whether that which Sung calls a cathode is the claimed emitter or whether that which Sung calls an anode is the claimed collector or vis versa.

Applicant argues on page 5 of the argument that "the insulator layer and the collector are not in contact". However, figure 2 of Sung discloses contacting the insulator layer 5 and the collector layer 25. Claim 15 is rejected.

  
THOMAS DICKEY  
PRIMARY PATENT EXAMINER